UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/996,451 | 11/28/2001 | Adam T. Lake | 10559-046002/P7405 | 3882 |

20985 7590 12/05/2003

FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081

| EXAMINER | |
|---|---|
| LEHNER, WILLIAM P | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2671 | 6 |

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/996,451 | LAKE ET AL. | |
| | Examiner | Art Unit | |
| | William P Lehner | 2671 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within tha statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, causa the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *8-11,19-22,29 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-11,19-22,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

The preliminary amendment filed on 11/28/01 has been received and entered.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8, 9, 11, 19, 20, 22, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Robinson (4855934).

3. In regard to claim 8, A method of applying a texture map to render a silhouette edge. Robinson uses a contour texture map 10 to find contours or silhouettes (column 4, lines 42-52).

4. Determining a size of a texture map area based on an eyepoint vector to the silhouette edge; The contour texture map 10 is sized to fit a the silhouette of a shape (column 4, lines 2-5 and FIG 1, element 10). A silhouette is the visible outline of an object and is dependent upon the position of the viewer. The pixels comprising this shape are sized based on an eye point vector. The point of intersection between this vector and the boundary, or silhouette edge is determined (column 2, line 65 – column 3, line 10). The size of the texture map is based on the silhouette of a shape, which is computed by an eye point vector to the edge.

5. Applying a texture map to the texture map area to render the silhouette edge. The contour texture map is used to render onto a monitor (column 2, lines 34-42).

6. In regard to claims 9 and 20, The texture map area has a width and a height; The x and y coordinates of the texture map are the width and height (column 2, lines 58-64). Further, any two-dimensional image (for example, a texture map) inherently has a width and a height.

7. The size of the texture map area is determined so that the width is orthogonal to the eyepoint vector and to the height. The TE vector between texture coordinates and eye coordinates has a vertical component that is perpendicular to the origin of eye space and the xy plane of texture space (column 6, lines 15-30). Perpendicular means right angles, which mean orthogonal.

8. In regard to claims 11 and 22, The method of claim 8, wherein the texture map area is a quadrilateral. The texture map in FIG 1, element 10 is a square. Squares have four sides, therefore they are quadrilaterals.

9. In regard to claim 19, An article comprising a computer-readable medium that stores computer-executable instructions for applying a texture map to render a silhouette edge, the instructions for causing a computer to: determine a size of a texture map area based on an eyepoint vector to the silhouette edge; and apply a texture map to the texture map area to render the silhouette edge. Note the above rejections to claim 8. The contour texture map memory (FIG 7, element 100) contains instructions for applying a texture map and determining its size.

10. In regard to claim 29, An apparatus for applying a texture map to render a silhouette edge, comprising: a memory which stores computer instructions; and a processor which executes the computer instructions to (i) determine a size of a texture map area based on an eyepoint vector to the silhouette edge, and (ii) to apply a texture map to the texture map area to render the silhouette edge. Note the above rejections to claims 8 and 19. The texture select processor (FIG 7, element 112) executes the instructions to determine the size of the texture map and renders the contour textures.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 10, 21, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson (4855934) in view of Official Notice.

13. In regard to claim 10, 21, and 30, The size of the texture map area is determined by: Robinson determines the size of the texture map based on an eye point vector (note the above rejections to claim 8).

14. Constructing a normal vector relative to the silhouette edge; Robinson constructs a vector TEZ which is normal to the texture map (FIG 4).

15. Defining the texture map area based on points that are positioned relative to endpoints of the silhouette edge along the direction of the width. Robinson's intersection points I are endpoints of the silhouette edge that are positioned along Td, which is in the direction of width (column 10, lines 7-20 and FIG 4 elements 10, I, and Td).

16. Determining a cross product of the normal vector and an eyepoint vector to determine a direction of a width of the texture map area; Robinson does not use the cross product of the normal vector and the eye point vector to determine the direction of width of the texture map area. The angle between the normal vector and the eye point vector is the angle at corner E,

which is not calculated. The angle A to determines the direction of width of the texture map area (FIG 4, element A and Td). Td is the direction of width of the texture map area. The origin of eye space E, the intersection point I, and the endpoint of the normal vector TEZ form a right triangle. Angle A is at vertex I of this triangle. The angles of all triangles must add up to 180 degrees. A property of this right triangle is that the angles at corners E and I must sum to 90 degrees (Official Notice). Robinson's angle E would be identical to 90 degrees minus the angle at corner A. Therefore, it would have been obvious to modify Robinson to determine the angle at E instead of the angle at A as taught by standard geometry because angle E is 90 degrees minus angle A.

17. Robinson does not use the cross product to calculate the angle at E. The angle at corner E is an angle between the normal vector TEZ and the eye point vector EP (FIG 4). It is known in the art to use the cross product between two vectors to compute an angle (Official Notice) Therefore, It would have been obvious to modify Robinson to determine a cross product of the normal vector and eye point vector to determine the direction of width of the texture map area as taught by standard geometry because computers can easily calculate angles using the cross product.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P Lehner whose telephone number is 703-305-0682. The examiner can normally be reached on 8:30 - 5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 703-305-9798. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

WPL